

**Cattle Business in Mississippi – August 2017**  
**“Beef Production Strategies” article**  
**Muscle Up**

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We all might not agree on an ideal cow, but we can all concur that our feeder cattle need muscle. It makes perfect sense, beef is a muscle meat and cattle that are heavily muscled often offer more product on the rail. In addition to frame size and weight, muscling scores are used to describe calves in the market reports from the USDA Agricultural Marketing Service. As calves go through the sale ring, they are assigned an USDA Muscling Score between 1 and 4. A score of 1 would indicate the heaviest muscled calves, while a 4 would be indicative of a calf with a dairy type muscle pattern. Based on data from Dr. Jane Parish’s stockyard study and almost every market report you see, buyers are willing to pay more for heavier muscled calves. Just today, I looked at a report from a stockyard where calves with a muscle score of 3 were consistently \$0.25-\$0.30 per pound less than their number 1 contemporaries.

Muscling impacts price for a number of reasons. Data from the Tri-County Steer Carcass Futurity, sponsored by Iowa State University (ISU) has shown that USDA muscling scores of feeder calves may be a good predictor for carcass merits. From 9,527 observations, ISU researchers concluded that heavier muscled calves (USDA Muscling Score 1) had heavier initial body weights, heavier hot carcass weights, larger ribeye areas, and lower yield grades than their lighter muscled (USDA Muscling Score 2) counterparts. As you would expect there is a tradeoff. The heavier muscled calves had lower marbling scores than the lighter muscle calves. Of course that makes sense as the heavier muscled calves were leaner and marbling is fat within the muscle.

If you recall a recent Stocker Sense article by Dr. Karisch, she explained how to determine the feeder calf grades of your calves. Depending on the goals of your operation, you should aim for your calves to have at least a score of 2. Based on Dr. Parish’s stockyard study, we have quite a bit of room for improvement in the muscling of our feeder calves. Based on 20,647 observations of feeder calves weighing 300-800 lbs, 12% of calves had a score of 1, 42% had a score of 2, and 43% had a score of 3. Only 3% had dairy type muscle patterns. Based on this data, there are quite a few light muscled calves going through our auction markets. Good news is – we’re only one good bull purchase away from increasing the muscling in our next crop of feeder calves. Think about this – you sell 15 steers each year at an average of 500 lbs each, and they received a \$0.25 per pound premium over the light muscled calves that you sold this year. If you keep your bull for 2 calf crops, you’ll gross an extra \$3,750 on your calves – which would be close to covering the cost of the bull.

When selecting a bull to improve muscle, there are two primary things you should consider. First, look at the muscle pattern of the bull. Make sure he is thick, has a strong topline and has some muscle definition. Remember the buyers of calves at an auction market will have about 13 seconds to decide if they can pay a premium for heavy muscled calves, so the visual attributes are important. Second, look at the bull’s EPD for ribeye area, larger ribeye areas are indicators for more muscle. There are heavy muscled animals in every breed, but there are some breeds that are known to be more muscular than others. Select the animal that best fits your needs.

Feeder calf buyers are willing to pay more money for heavier muscled feeder calves. If increasing muscling ability is a goal in your operation, it can be accomplished with genetics. However, it is always a good reminder that heavy muscling is related to heavier body weights that are related to heavier birth weights. It is also important to remember that muscling and milk production are negatively related so as one increases, the other decreases. Lastly, a producer can have the very best genetics for muscling, but if the nutritional and health needs of the cattle are not met, they will not be able to express the desired trait. Select a balanced trait, MISSISSIPPI BRED, heavy muscled bull for your next sire!

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For more information about beef cattle production, contact an office of the Mississippi State University Extension Service or visit [extension.msstate.edu](http://extension.msstate.edu).